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KIF6 POLYMORPHISM AND THE EFFICACY OF STATIN THERAPY IN PRIMARY PREVENTION: DATA FROM THE JUPITER TRIAL

ACC Poster Contributions
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Background: Hypothesis generating data raise the possibility that carriers of the KIF6 719Arg allele preferentially benefit from statin therapy and on this basis a commercial assay for KIF6 has been developed.

Methods: In the recently completed JUPITER trial, men and women without prior cardiovascular disease or diabetes who had baseline LDLC<130mg/dL and hsCRP >2mg/L were randomly allocated to rosuvastatin 20 mg daily or to placebo and followed for first major vascular events (nonfatal myocardial infarction, nonfatal stroke, hospitalization for unstable angina, arterial revascularization, or vascular death) and for all-cause mortality. We evaluated the effect of polymorphism at rs20455 encoding the KIF6 719Arg allele on outcomes in this primary prevention trial, both among Caucasian participants and in the trial as a whole.

Results: Among 8,781 Caucasian trial participants, we observed no increase in vascular event rates among carriers of the KIF6 719Arg allele as compared to non-carriers, nor any difference in percent LDLC reduction with rosuvastatin according to genotype. Rosuvastatin allocation was associated with an almost identical reduction in the trial primary endpoint among carriers (HR 0.61, 95%CI 0.43-0.87) as among non-carriers (HR 0.59, 95%CI 0.39-0.88)(P-interaction = 0.90). Genotype had no impact on rosuvastatin efficacy in further analyses that included all-cause mortality or in analyses conducted in the total trial cohort.

Conclusions: In the large primary prevention JUPITER trial, rosuvastatin was equally effective at reducing cardiovascular event rates among carriers and non-carriers of the KIF6 719Arg allele. Thus, at least for rosuvastatin, there appears to be no clinical utility to screening for KIF6 genotype as a method to determine vascular risk or to predict statin efficacy.